



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,133	11/20/2000	Michael Claus	Z032-C	6379

7590 05/05/2005

Walter Ottesen
Patent Attorney
P O Box 4026
Gaithersburg, MD 20885-4026

EXAMINER

WILSON, JACQUELINE B

ART UNIT	PAPER NUMBER
----------	--------------

2612

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/715,133

Applicant(s)

CLAUS ET AL.

Examiner

Jacqueline Wilson

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/20/05.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 14 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/6/01 + 10/15/04

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/20/04 have been fully considered but they are not persuasive.

The applicant argues that the prior art (Wilson) fails to teach correcting the image data in accordance with the detected angular data with the image data being time delayed by a time interval relative to the detected angular data. The examiner disagrees. Wilson teaches memory 17 is used for correcting the signal using the motion sensor (10) and the image signal (12). The examiner strongly believes that this correction causes an output to be time delayed by a time interval, which is relative to the motion sensing unit, for the purpose of correcting the image signal. The claim does not provide any relationship between the "time delay" of the inertial sensor and the "time interval" of the correcting means. Therefore, the examiner believes the limitation is unrelated. As for the time delay of the inertial sensor, motion detection devices are notoriously well known in the art to include a time delay signal associated with the output. This provides adequate correction of the image signal. The examiner therefore maintains the rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2612

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-6, 8-10, and 12-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (GB 2116397).

Regarding Claim 1, Wilson teaches detecting image with a CCD camera and outputting image data (referred to as camera 11) and detecting movements associated with the camera (referred to as motion sensing unit 10). Wilson specifically discloses that motion of the camera may be caused by the cameraman, the motion of a vehicle or aircraft (page 1, first col, lines 75+). Although, not specifically disclosed, it is inherent that the motion sensing unit (10) would be an angular sensor such as an inertial sensor for detecting movement of the camera for correction. (Official Notice) Since the camera is mounted on the vehicle or aircraft, it is inherent that the motion sensing unit detects the movements of the carrier. Wilson further discloses that the output of the motion sensing unit as well as the output of the camera is stored in a memory (17) which can correct for stabilization during imaging or at a later time (page 1, second column, lines 90-98; and page 2, first column, lines 42-62). Both image data and data from the motion sensing unit are inherently delayed since they both are stored in the memory for correction.

Regarding Claim 2, Wilson teaches storing the image data from the camera to delay the image data by a time interval, as discussed in Claim 1 (storage memory 17).

Regarding Claim 3, Wilson teaches the image data is carried out either online, or offline at a later time, by performing the step of displaying the corrected image data as a stabilized image on a monitor (page 1, first column, lines 118-126).

Regarding Claim 5, Wilson teaches the motion unit (10) sends an output signal which inherently has a time delay for travel to an interface unit (14) which time delays the signal by performing predetermined processing for outputting correction information to the image store (17). This information is generated for reading into and out of the video store (17) such that the result is a suitable image. This reads on the limitation of the time interval for delaying considers the time delay by the sensor as well as by scanning and computation time (see also disclosure of correcting means on page 2, second column- page 3).

Regarding Claim 6, Wilson teaches that the sensor is attached to the camera which is mounted on a vehicle or aircraft (page 1, column 1, lines 10-62). This interpreted as a strap-down sensor.

Claim 8 is analyzed and discussed with respect to Claim 1. The limitations of a first device is disclosed on page 2, second paragraph, lines 103+) and the second device for delaying the image data is interpreted as the video store (17) for delaying the output of the image signal.

Claim 9 is analyzed and discussed with respect to Claim 8. (See rejection of Claim 8 above.)

Claim 10 is analyzed and discussed with respect to Claim 3. (See rejection of Claim 3 above.)

Art Unit: 2612

Claim 12 is analyzed and discussed with respect to Claim 5. (See rejection of Claim 5 above.)

Claim 13 is analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson.**

Regarding Claim 4, Wilson teaches storing the motion data together with the image data (17) and carrying out the correction of the image data as an off-line evaluation at a later time (page 2, first paragraph, lines 119-126). Although Wilson does not specifically disclose the correction that is being performed at a later time is performed in a fixed ground station, it would have been obvious, if not inherent, that the later time would be at a location on the ground instead of while on the aircraft or vehicle. Since Wilson already teaches correction is performed on the aircraft, one having ordinary skill would recognize that it would have been obvious to perform correction at a

Art Unit: 2612

fixed ground station. This gives the user the opportunity to obtain information and process it later with or using other resources, such as on a personal computer.

Therefore, it would have been obvious to one having ordinary skill in the art to carry out the correction of image data as an off-line evaluation in a fixed ground station.

Claim 11 is analyzed and discussed with respect to Claim 4 with the further limitation of a unit for recording the angular data from the inertial sensor together with the image data on board the carrier. However, Wilson teaches the image along with the motion data is stored in a video store (17) for correction at a later time, as discussed above. With reference to page 1, first column, lines 120, Wilson teaches a video recorder may be included to record information. Since Wilson teaches performing correction at a later time, it would have been obvious to one having ordinary skill to include a recording unit for saving the information, performing correction at a later time, such as at a home personal computer, for the purpose of maintaining the information and utilizing it by using other means. Therefore, it would have been obvious to one having ordinary skill in the art to use a recording unit for recording the angular data from the sensor together with the image data on board the carrier.

Allowable Subject Matter

6. Claims 7 and 14 are allowed.

Regarding Claim 7, the prior art neither teaches nor fairly suggests a method for digitally stabilizing an image recording with a CCD sensor, which is mounted in a

Art Unit: 2612

moving or airborne carrier, for substantially eliminating unwanted movement influences of flight movements of the carrier on the image quality of the image recorded by the CCD sensor, the method comprising the steps of detecting an image, detecting the flight movements of the carrier as angular data with an inertial sensor and the inertial sensor being adapted to supply the angular data with a time delay, and correcting the image data in accordance with the detected angular data with the image data being time delayed by a time interval relative to the detected angular data, as claimed in Claim 1, further comprising the step of **shifting the image lines by pixels by the corresponding angular increments transversely to the direction of flight when correcting the image data to stabilize about the roll axis while stabilizing about the pitch axis takes place omitting or reproducing whole lines.**

Claim 14 is substantially similar to Claim 7.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Wilson whose telephone number is (571) 272-7322. The examiner can normally be reached on 8:30am-5:00pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2612

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JW
05/02/05


WENDY R. GARD
SUPERVISORY PATENT EXA
TECHNOLOGY CENTER 25